DOCUMENT RESUME

ED 268 395 CG 018 953

AUTHOR Damico, Sandra Bowman
TITLE Social Interactions in Middle Schools: Effects of Organizational Structure.
PUB DATE Apr 85
NOTE 45p.; Paper presented at the Annual Meeting of the American Educational Research Association (69th, Chicago, IL, March 31-April 4, 1985).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Black Students; *Desegregation Effects; Grade 7; Junior High Schools; Junior High School Students; Middle Schools; Peer Relationship; *Racial Relations; *School Desegregation; *School Organization; School Policy; Social Networks; *White Students

ABSTRACT

School desegregation has been promoted as a means for decreasing racial hostility and for raising minority achievement. A study was conducted to explore the effects of school organizational structure on the race/gender composition of interacting social networks of adolescents attending two middle schools. While the schools varied in the opportunities provided for interactions among classmates, each had a student body similar in socioeconomic status and percentages of white and black students. Middle School (MS) had interdisciplinary, multigrade team organization with random assignment of students resulting in a heterogeneous student population. Junior High (JH) had ability tracking with limited student interaction. Data were collected from 345 seventh graders at JH and 332 seventh graders at MS. Students rated how often they talked with all other students in their grade. Factor analysis was used to describe the social networks existing at each of the schools. By controlling opportunities for interactions, school structure was found to affect the size, race, and gender of social groups and linkages between them. The results indicated that: (1) black males were better represented in white social networks at MS than at JH; (2) black females were equally accepted in both schools; and (3) acceptance of whites by blacks was generally better at MS than at JH. These results suggest that a school's structure is important in fostering interracial relationships. References and data tables are appended. (Author/NRB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED268395

SOCIAL INTERACTIONS IN MIDDLE SCHOOLS
EFFECTS OF ORGANIZATIONAL STRUCTURE

Sandra Bowman Damico
University of Florida

CG018953

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

[ ] Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Sandra B. Damico

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Paper presented at the annual meeting of the American Educational Research Association, Chicago, April, 1985.

ABSTRACT

This study explored the effects of school organizational structure on the race/gender composition of interacting social networks of adolescents atending two middle schools. While each school varied in the formal and informal opportunities provided students to interact with classmates, each had a student body similar in SES and percent white and black. Data were collected from 345 students at Junior High and 332 at Middle School. Factor analysis was used to describe the social networks existing at each of the schools. By controlling opportunities for interactions, school structure was found to effect the size, race, and gender of social groups and linkages between them. When school structure limits social interactions across race and gender lines, adolescents are denied opportunities to develop satisfying relationships with those who differ in anyway from themselves.

Social Interactions in Middle Schools
Effects of Organizational Structure

School desegregation has generally been promoted as a mechanism for decreasing racial hostility and raising minority achievement. However, interactions between majority and minority pupils in many desegregated schools are distinctly cool if not openly hostile. How then do we explain those schools which have high levels of inter-group cooperation accompanied by low levels of hostility or animosity? Fortunately there is a social-psychological theory which helps explain these between-school differences and also provides guidelines for curricula and school policies. Contact theory, formulated by Allport (1954), maintains that before contact between two differing groups will result in positive attitudes toward each, both groups must possess equal status, the groups must be cooperatively interdependent, and the contact must enjoy the positive support of those in authority. Two other conditions were added by Cook (1969): (1) the situation should encourage acquaintanceship and (2) the behavior of the group in question should contradict stereotypical beliefs. Moreover, Allport (1954) stated that when cross-group contact was either limited or superficial, <u>increases</u> in stereotyping and intergroup hostility should be expected. Thus, positive interracial attitudes are developed through experiencing positive, sustained, interracial contact.

If social acceptance is largely a function of positive interpersonal contact, then the difficulties many minorities experience in gaining acceptance from majority group members may be largely a function of the type of contact opportunities which an institution provides. Within the elementary school setting, social and academic groupings and scheduling tend to be fluid enough to allow a relatively large amount of interpersonal contact among students. At the middle school level, however, many schools adopt organizational and curricular policies which segregate students once they are in the building. This guarantees minimal contact between minority and majority group students and provides them with virtually no opportunity for the development of intergroup friendships. At the same time that the school structure is reducing opportunities for contact among students, the significance of peer contact for young adolescents is increasing. Beginning in about the fifth and sixth grades, the relationship between being liked by classmates and achievement becomes increasingly significant (Richards, 1967). Also beginning at this age, significant correlations are found between rejection by peers and high anxiety, maladjustment, and hostility (Schmuck & Schmuck, 1979). Of particular interest for this study are findings that black sixth graders in majority white classrooms evidenced a rise in achievement when they were in classes which stressed achievement norms and they were accepted into the white peer group (Lewis & St. John, 1974). The mere presence of high-

achieving white classmates was not sufficient to raise black achievement.

The direct effects of organizational structure on friendship formation has also been addressed in the research literature. Hallinan (1976) found that open classes allowed much more peer group interaction than did traditional arrangements. Equally important, she found that open classroom settings were less conducive to the establishment of hierarchical distributions of friendship choices, which meant that there were fewer social isolates or sociometric stars within them. In a similar vein, Bossert (1979) found that recitation-mode classrooms resulted in rigid, ranked social structures, whereas multitask classrooms were characterized by fluid, undifferentiated friendship groupings. While the term "open classroom" can have many definitions, contact theory provides instructional guidelines which do not demand that classroom walls be knocked down. Rather, current organizational patterns must be examined to determine if they are making the adolescents' middle years of schooling both tolerable and productive. Such an examination becomes imperative when the outcomes of certain school organizational patterns, by limiting opportunities for positive cross-group contact, have a detrimental effect on minority students' adjustment, acceptance, and achievement.

If a school does structure its program to provide students with opportunities to experience positive cross-race contact, does it

make any difference in the actual behavior of the students? To answer this question a series of studies, both qualitative and quantitative, have been conducted at two desegregated middle schools (grades 6, 7, and 8) which vary in organizational structure. This present study is a follow-up to an analysis of frequency of cross-race and cross-sex verbal communication in the two schools (Damico & Sparks, 1984). In it multiple analysis of variance procedures had revealed significant differences between the schools in the amount of cross-race and within-race communication; the structure of the curriculum facilitated friendship formation in one school and inhibited it in the other. Additionally, at both schools white females were found to be the center of much of a school's social interaction while black females were more socially isolated than any other group in their schools. While these analyses provided a clear contrast between the two schools and indicated the effects of organizational structure on cross-group communication, they failed to describe the composition of each school's social networks and to define those who were isolated. Therefore, this present study sought to define the race and sex composition of each school's social networks from the perspective of each race/sex group.

Method

Sample

Two middle schools containing grades 6, 7, and 8 in the same

district in the southeast were included in this study. Attendance zones for all middle schools in the district had been redrawn a year before this study began so that each school had 70% white and 30% black students. Additionally, the SES of students attending these two schools approximated each other as indicated by number of students on free or reduced lunch programs. Data were collected from all seventh grade students at the school which will be called Junior High (n=345) and those on two mulitgraded teams at the one called Middle School (n=332). This resulted in the sampling of approximately one-third of the student body of each school. While the two schools were similar in size (slightly over 900 pupils), SES, and percent white and black, they differed dramatically in terms of their organizational structure. Each is described below.

Middle School. The middle school incorporated many of the organizational and curriculum features experts (eg. Alexander & George, 1981) outline as components of an exemplary school for early adolescents. Among these features were an interdisciplinary, multigrade team organization; random assignment of students to a team with which they remained for three years; and a strong affective program. In practice, these program components increased the heterogeneity of classroom student populations, reduced the focus on homogeneous grade-level expectations, and increased the time students and teachers spent together. Consequently, teachers used more multitask, individual and cooperative learning activities

and relied less on recitation-mode and competitive instructional formats. At Middle School the first 35 minutes of the school day were devoted to a class called "Advisor/Advisee" which functioned in many ways like a homeroom. However, these small classes were also charged with providing students with help in dealing with academic and social problems. Since classes at Middle School were not ability grouped and most used a multitask organization, verbal communication among students was fostered. Additionally, at lunch time students filed through the cafeteria at 10 minute intervals. Once they had completed eating they went outside where they gathered in small groups under trees, sat on benches talking, or joined one of the games, like football, which spontaneously began each noon. All of these features combined to provide students with opportunities to come into contact with a large number of other students across ability and racial lines.

Junior High. The other school in the sample, Junior High, was organized along more traditional lines. Students were segregated by grade, and their classes in reading, language arts, and math were tracked by ability. This functioned to limit the number of students with whom any one student would come in contact. Thus, the classrooms in this school were composed of predominantly same-race students with teacher-lecture and student-recitation being the primary mode of instruction. Since the recitation-mode of instruction restricted student-student interactions, it operated to

further limit opportunities to develop new friendships. Additionally, even the policies surrounding lunch time failed to provide opportunities for students to engage in informal groupings and develop new friendships. They were required to spend the entire lunch period in the cafeteria and were prohibited from leaving their seats. Thus, the structure of this school limited opportunities for students to interact with each other both during classes and at lunch.

Instruments

One dimension of students' experiences with schooling is the climate-of-acceptance which pervades an entire building and thus affects frequency of social interactions across race and sex lines. While the use of sociometric devices is an acceptable approach to tracing friendship groupings, caution needs to be exercised in their use when trying to define climates of acceptance. The work of Bernard and Killworth (1973) and Holland and Leinhardt (1973) indicates that the use of sociometric techniques are not adequate for describing and analyzing social networks; sociograms provide data on cliques but fail to provide information on communication among groups. Since the concern in this study was not whether blacks and whites were "good" friends but rather were they comfortable enough with each other to engage in informal conversations, a sociometric instrument was deemed inappropriate. To overcome the limitations associated with sociometric scales,

Killworth and Bernard (1974) developed a method for collecting and analyzing quantity of interactions rather than quality within bounded groups. Their method, termed "catij", was slightly modified and used in this study. This method is paticularly useful when used in combination with observation techniques to describe the interaction patterns discerned through statistical analyses.

Procedures

Briefly, students were provided with an alphbetical listing of all students in their grade (Junior High) or on their team (Team A or Team B) and asked to first circle their own name and then place a check mark in the appropriate column indicating how frequently they talked to every other student. Four choices were available ranging from "I talk to this person a lot" to "I never talk to this person". Seventh grade or team social studies teachers in both schools collected the data after receiving instructions from the researcher. All data were collected during a one week period.

Results

Within schools data were coded for race and sex of respondent and recipient of verbal contact. Since the two teams at Middle School each constituted a bounded group (i.e., there was no overlap in teachers or students between them) each was treated statistically as though it were a separate school. Factor analysis procedures were used to identify communicating social networks within each of the three schools. Rather than constructing one

large network for each of the schools, the reported communication patterns of each race-gender group were analyzed separately. Since perceptions of social interactions may vary across race/sex groups this approach tapped the multiple realities of a school's social networks.

Factor analysis techniques were used because they enable us to determine whether there are any underlying patterns of relationships within the data. Or, in this case, were there any clearly identifiable groups of interacting students. After initial factors were obtained using the principal components solution, they were rotated orthogonally using the varimax solution in order to obtain meaningful structures. Tables 1, 2, 3, and 4 describe the factor structures which emerged from the analyses of each race-gender group. (Amount of variance accounted for by each of the factors presented in these four tables is provided in Table 7.) For purposes of comparison across schools the percentage of each race/sex type student belonging to a factor is recorded rather than actual number of students. Two additional types of data are reported at the bottom of each table. The first of these is the percentage of each race/sex type of student selected across the factors. For example, white males, Team A are shown on Table 1 as representing 33.7% of all students selected to membership in the six factors for that team. Of particular interest is the final row of percentages. This reports a percentage of all of the available

race/sex category of students within the school who could have potentially been included within the social networks described by the factors. The n's on which these percentages have been calculated were adjusted to eliminate counting more than once those students who loaded on more than one factor. Again referring to Table 1 as an example, we see that 42.9% of all the white males on Team A were identified as members of this particular social network. The data contained in each of these tables is briefly summarized below. Two additional tables have been assembled as an aid in interpreting the factor structure tables.

White Male Communication Networks:

Table 1 summarizes each school's social network as perceived by the white males attending them. Teams A and B are fairly similar in the percent of each of the class's race/sex groups which are represented in these factors. The figures indicate that white males on the teams have frequent social interactions with a broad spectrum of students across race and sex groups. Real differences are observed, however, between the white males on Teams A and B and those attending Junior High. While the percent of black females included by Junior High white males within the factors which describe their social interactions is larger than those recorded for Teams A and B, the percent of available black females actually included is comparable to those of the teams. This is explained by the fact that many of the same black females loaded on factors 2 and

6 (interfactor correlation = .24026); and these two factors each were composed of a large percentage of black females. Also, in contrast to Teams A and B, smaller percentages of Junior High's white males, white females, and black males are included within the social networks described by white males.

Insert Table 1 About Here

White Female Communication Networks:

When examining the students whom white females indicate interacting with (Table 2), we again see that Teams A and B are fairly similar. These females talk extensively to approximately 70 percent of the white and black males and 35 percent of the black females. The most surprising finding seems to be that white females, particularly those on Team A, underselect each other. These figures, however, reflect low variability in selection rather than widespread rejection of each other. That is, white females talked so extensively to so many other white females that factor loadings are depressed. At Junior High fewer white and black males are included within the communication factors of the white females than those on the teams. While black males constitute nearly 24 percent of the students who loaded on the factors describing the social interactions of Junior High's white females, this figure represents only 56 percent of the class's black males since 17

percent of them were selected more than once. This is the same phenomenon we saw in Junior High's white male selections of black females.

Insert Table 2 About here

Black Male Communication Networks:

The social networks reported by black males share many common features across all three schools (Table 3). They all selected a larger percentage of their classes' white females than black females. When the smaller number of black females within each class, compared to white females, is taken into consideration, this discrepancy becomes more glaring. Black males also included a large proportion of white males in their communication networks. We again note that relative to other race/sex groups, the black males underselect each other. As noted for white females, this pattern represents the fact that students more frequently talk to others of their same race/sex group than other types of students resulting in low variability in the correlation coefficients. Black males at Junior High continue Team A and B's pattern of talking to large numbers of white females, but the number of white males they talk to is lower than reported by the black males on the two teams at Middle School.

Insert Table 3 About Here

Black Female Communication Networks:

The black females on Teams A and B select large portions of their classes' whites (males and females) and black males Table 4). The underselection of their own race/sex group is a repeat of a pattern previously noted for other students. At Junior High the percentage of each of the class's race/sex students were fairly evenly included within the black females' communication network. This is astonding because it reverses the same-sex-race underselection pattern. The loading of nearly 46 percent of the class's black females on these factors indicates that there are at least two distinct communicating networks of black females at Junior High with little overlap between them.

Insert Table 4 About Here

Factor Descriptions:

Table 5 provides a summary of the descriptions which define the factors recorded in Tables 1, 2, 3, and 4. The criteria used in naming factors were: (1) a single race/sex factor name was used when a substantial percentage of the students within a factor fell into only one race/sex group; or (2) a multiple race/sex factor name

was used when each of the race/sex groups had a minimum of 25 percent student representation on the factor and together they accounted for at least 70 percent or more of the students on the factor.

Insert Table 5 About Here

While Middle School Teams A and B vary somewhat in the total percentage of reported factor-types, their social networks still can be considered comparable. But contrast the two teams to the factor-types recorded for Junior High. The first thing noted is the absence of white male groups, which constitute a substantial proportion of the factor-types on the two teams. This reflects the lower percentage representation of white males included within the factors of the various race/sex students at Junior High. The other thing which draws attention is the number of factor-types unique to Junior High. Two of these factors represent the exclusion first of the black females and then the black males. The remaining four groups all include black students in their factor description. While it would be tempting to view this as an unobtrusive measure of successful desegregation at Junior High, it is not. In fact, these factors define a school world in which there is greater social isolation between blacks and whites than that encountered at Middle School.

Social Network Inclusion and Exclusion:

Examination of Table 6 helps in the interpretation of the race/sex factor tables by presenting a number of interesting contrasts among schools. While it might be desirable to have students involved in extended interaction networks that include others across race and sex groups, we would hope at a minimum that all students at least had some friends regardless of race or sex. The percent of students at Middle School who were not selected by any other students as those talked to frequently was quite small, but slightly more than 15 percent of the students at Junior High were not included in anyone's verbal communication network. A break down of these percentages by race/sex indicates that black females constitute the majority of those on the two teams who fail to be selected while there were no white males who failed to be selected. The percentages at Junior High are fairly consistent across race/sex groups though black females are again excluded more often than other types of students.

Insert Table 6 About Here

Another way of looking at inclusion/exclusion is to determine if there were any students selected as members of communicating networks by all race/sex categories of students. The answer is yes. The percentages for the teams at Middle School were 13.8% and 15%.

Contrast this to the 1.7% fitting this description at Junior High. In other words, students at Junior High were not likely to talk extensively enough to other students across race and sex barriers to be included within multiple communication networks. When these percentages are broken down by race/sex group we find that there is representation across all groups for Team A, all groups except black females for Team B, and only whites at Junior High. Thus among those few students at Junior High who were talked to extensively, there were no blacks; and not only were they white, they also were primarily female.

Given the above discussion it is interesting to note the number of students selected by one race group but not the other. These figures were compiled as a rough measure of racial isolation. To be included a student had to have been a member of the social networks of both the males and females of one race group but not have been selected by either sex of the opposite race. There were very few students who were selected by whites but not blacks on Team A, a few more on Team B and still more at Junior High. At Middle School there were no white females who were excluded by the other whites. On both of the teams more black females were selected by whites but not blacks than any other group. At Junior High approximately 5% of the white males and females fell into this category. Of some interest is the large percentage of black males talked to by whites but not blacks. The percentage of black females who fell into this

category at Junior High is also noteworthy. These blacks may be those tracked into higher ability, predominantly white classes.

There are approximately equal percentages of students across schools included in the social networks of blacks but not whites. Many of them are whites. While blacks included many whites within their communication networks, they tended to choose many of the same whites repeatedly. That is, the same white students loaded on more than one black student factor. This is a reverse of the pattern above. Apparently there are a number of students who are talked to more frequently by opposite-race students than own-race classmates. Again, the structure of the curriculum may account for this phenomenon.

As indicated previously, the amount of variance accounted for by each factor by race/sex group is summarized in Table 7.

Insert Table 7 About Here

Summary and Discussion

This study was designed to define and contrast the sex and race composition of interacting social networks at two differently structured middle schools. Differences in the composition of socially interacting networks were found to exist between Middle School and Junior High in both cross-race and within-race acceptance patterns. Additionally, differences in inclusion/exclusion of black

and white females were found which transcended school boundaries.

Cross-Race Communication Networks:

Approximately two-thirds of the black males on Middle School Teams A and B were included within the social networks of white males and females. In contrast, black males were not as well represented in white social networks at Junior High. Moreover, at this school a number of the same black males loaded on more than one white male or white female factor, indicating that some of the black males at Junior High were considered more appropriate acquaintances than others.

On the surface there appear to be few differences in acceptance of black females across schools. And, in fact, among the white females there wasn't. At both schools white females only included approximately one-third of their class's black females within their social networks. Some differences across schools were noted however in white male acceptance of the black females. White males at Middle School included approximately two-thirds of the class's black females in their communication networks. While white males at Junior High selected a comparable percentage of their available black females, many of the same black females were repeatedly selected by the white males while many others were not selected at all. As with the black males, this indicates tha there were forces operating at the school which limited white-black contact.

In sum, we find that blacks are a more integral part of white

social networks at Middle School than Junior High, though black females are not included to the same extent as black males. These school differences in white inclusion of blacks are consistent with previous research (Damico, Bell-Nathaniel, & Green, 1981) in which white students attending team organized middle schools had significantly more black friends than did whites attending traditionally organized schools.

With one exception black students' acceptance of whites into their social networks varied by school structure. Significant percentages of both white males and females were included in Middle School's black networks. In fact, the black males on Team A included all of the team's white females within their communication networks. The black females at Middle School also included substantial proportions of white males and females within their social networks. Consistent with this pattern, black males at Junior High included a large proportion of Junior High's available white females within their communication network. Otherwise, a clear contrast existed between the black-white acceptance patterns of the two schools. At Junior High black females included fewer than 50% of the class's whites in their networks while between 60% and 75% of Middle School's whites were so included by its black females. It is worth poointing out that a substantial number of whites were talked to by so many blacks that many of them loaded on more than one factor, as did some blacks on white factors. But,

given the large percentage of each classes' whites who actually were included by blacks, this may be interpreted to mean that while some whites were obviously more popular with blacks than others, this phenomenon did not limit interaction between blacks and the other, less popular, whites in the class.

The inclusion of large proportions of whites in black social networks has been reflected in earlier research in which blacks were found to perceive whites more positively than whites perceived blacks (Damico, Green & Bell-Nathaniel, 1982) and in which lower-status minority students viewed higher-status majority students as having qualities to which they aspired (Patchen, Hofmann, & Davidson, 1975; Simpson & Yinger, 1972). An additional explanation for the inclusion of a large proportion of whites in black social networks may be the numerical minority status held by blacks within a class. Being a minority means that more communication will be directed to majority students simply because there are more of them. We should not loose sight of the fact, however, that whites were more acceptable to blacks at Middle School than Junior High just as blacks were more acceptable to whites. It may again be that the structure of Junior High failed to provided conditions under which positive cross-race contact and acquaintanceships could flourish.

Within Race Communication Networks:

The white females at Middle School included more white males

within their social networks than did the white females at Junior High. Likewise, white males at Middle School indicated that a larger proportion of the white females within their classes were involved in their communication networks than those at Junior High. The same pattern occurs for black inclusion of blacks. Black males included more black females at Middle School than Junior High and black females followed suit by including more Middle School black males than those at Junior High. Thus, there was less within-race communication at Junior High than Middle School. There are, however, a couple of additional points that need to be made about within-race communication. In general, the percent of own-race-sex inclusion within the factors is depressed due to low variability among similar race/sex students. This reflects closer ties and higher rates of interaction with those of the same race and sex than those who differ. But an exception is noted at Junior High for both white and black females; they divided the proportion of race/sex students included within their social network factors in a fairly equal manner, including same-race females. An interpretation of this anomaly is that there are at least two distinct groups of black females and white females at Junior High and that within each race group there is very little overlap between groups.

While the structure of Junior High has already been hypothesized to limit cross-race contact, we now must add the conjecture that its structure also failed to provide opportunities for students within a

race group to become friends. If this is so, the structure of the school functioned to limit friendship selection to those known in elementary school, tracked into the same ability classes, or neighborhood friends. Such a process would limit within- as well as cross-race friendship development.

The Social Networks of White and Black Females:

White females were included within the social networks of most students. And in fact, they represented a substantial proportion of those students selected as members of the various factors. On the other hand, black females were underrepresented, especially in the social networks of the whites. White females, in particular, limited the number of black females included within their social networks. Only one-third of each class's black females were talked to frequently enough by white females to load on their social network factors. Even the inclusion of black females in the social networks of the black males is not straight forward. At each school a small number of the same black females were talked to repeatedly by the black males while others were totally ignored. In fact, 30% of Team A's black females, 43% of those on Team B, and 56% at Junior High were not included within black male social networks. Moreover, black males talked to larger percentages of their class's white than black females. When it is remembered that there were substantially more white than black females in each class, these percentage differences are even more revealing. With the exception of Junior

High, white males did not include more black females in their social networks than did the black males. They did, though, include more of them than did the white females.

The pattern which emerges from an examination of social network factors is that black females tend to be excluded by classmates in a way in which other race/sex students are not. Perhaps a more dramatic way of making the same point is to count the frequency with which various race/sex groups were omitted from all factors, across schools, which defined social networks. Black females didn't load at all on nearly 20% of the factors while white females were missing from only 8% of them. Another approach to arriving at the same conclusion is to recall the percentages of students not selected by any other students, i.e., those totally excluded from the communication networks within their classes. While the percentages varied by school, in each black females accounted for the largest percent of those excluded. They also accounted for the fewest of those included in the social networks of all race/sex groups; in fact, only on Team A were any black females so included. In contrast, few white females were social isolates while substantial percentages of them were included within the social networks of all students regardless of race or sex.

Factor analyses of this data set confirmed the analyses obtained from the multiple analysis of variance: students at Junior High had a much more restricted range of classmates with whom they talked

than did those students attending Middle School. Two major differences in the organizational structure of the two schools may be cited to account for these differences: (1) students at Junior High were ability grouped for most academic subjects; and (2) teachers at Junior High relied almost totally upon a recitation mode of instruction. By limiting the nature and time of exposure to others, ability grouping constricts the number and variety of students with whom any one student comes in contact. Additionally, in classrooms which depend almost exclusively on a recitation instructional format, students are evaluated by teachers, themselves, and their peers on their ability to perform orally, and these evaluations become the basis of social status rankings (Bossert, 1979). Consequently, low ability tracked students are overwhelmingly rejected by those in higher tracks (Schwartz, 1981). Early adolescents who are rejected by classmates experience alienation from school, develop low self-esteem as students, and have trouble concentrating for long periods of time on academic tasks (Schmuck, 1963).

The ramifications of school structure on student adjustment in terms of academic achievment, peer group relationships, school attachment and affiliation needs have just recently begun to be recognized. Since the middle school generally has few extracurricular activities through which students can learn to interact, structured classroom experiences become important vehicles

through which students learn about themselves and others. If the fostering of cross-race contact is deemed important, then the structure of a school's curriculum and many of its policies can be used to reach this goal. Middle school educators should consider school structure as a mechanism for personal/interpersonal development as well as cognitive development.

References

Alexander, W. & George, P. (1981). The exemplary middle school. New York: Holt, Rinehart, & Winston.

Allport, G. (1954). The nature of prejudice. Cambridge, MA: Addison-Wesley.

Bernard, H.R. & Killworth, P. (1973). On the social structure of an oceangoing research vessel and other important things. Social Science Research, 2, 145-184.

Bossert, S. (1979). Tasks and social relationships in classrooms. Cambridge: Cambridge University Press.

Cook, S. (1969). Motives in conceptual analysis of attitude-related behavior. In W.J. Arnold & I. Levine (Eds.), Nebraska Symposium on Motivation: Vol. 18 (pp. 179-231). Lincoln: University of Nebraska Press.

Damico, S., Bell-Nathaniel, A., & Green, C. (1981). Effects of school organizational structure on interracial friendships in middle schools. Journal of Educational Research, 74, 388-393.

Damico, S., Green, C. & Bell-Nathaniel, A. (1982). The impact of school organization on interracial contact among students. Journal of Educational Equity and Leadership, 2, 238-252.

Damico, S. & Sparks, C. (1984, April). Interracial contact opportunities: Effects of organizational structure on communication patterns in desegregated middle schools. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

Hallinan, M. (1976). Friendship patterns in open and traditional classrooms. Sociology of Education, 49, 254-265.

Holland, P. & Leinhardt, S. (1973). The structural implications of measurement error in sociometry. Journal of Mathematical Sociology, 3, 85-111.

Killworth, P. & Bernard, H.R. (1974). Catij: A new sociometric and its application to a prison living unit. Human Organization, 33, 335-350.

Lewis, R. & St. John, N. (1974). Contribution of cross-racial friendship to minority group achievement in desegregated classrooms. Sociometry, 37, 79-91.

Patchen, M., Hofmann, G., & Davidson, J. (1976). Interracial perceptions among high school students. Sociometry, 39, 341-345.

Richards, H. (1967). Psychologial factors associated wih the sociometric status of children attending a comprehensive school in Breconshire. British Journal of Educational Psychology, 37, 261-262.

Schmuck, R. (1963). Some relationships of peer liking patterns in the classroom to pupil attitudes and achievement. School Review, 71, 337-359.

Schmuck, R. & Schmuck, P. (1979). Group processes in the classroom. Dubuque, IA: Wm. C. Brown.

Schwartz, F. (1981). Supporting or subverting learning: Peer group patterns in four tracked schools. Anthropology and Education Quarterly, 12, 99-121.

Simpson, G. & Yinger, J. (1972). Racial and cultural minorities: An analysis of prejudice and discrimination (4th edition). New York: Harper & Row.

Table 1

Factor Analysis of Verbal Communication Patterns of White Males
Percent Race/Sex Included Within Factors*

	Middle School--Team A				Middle School--Team B				Junior High			
Factors	Percent WM	Percent WF	Percent BM	Percent BF	Percent WM	Percent WF	Percent BM	Percent BF	Percent WM	Percent WF	Percent BM	Percent BF
1	28.6%	28.6%	19.0%	23.8%	33.3%	55.6%	2.8%	8.3%	23.5%	41.2%	20.6%	14.7%
2	57.9	36.8	5.3	0.0	50.0	21.4	25.0	3.6	13.6	27.3	13.6	45.5
3	0.0	33.3	33.3	33.3	50.0	0.0	50.0	0.0	28.6	42.9	21.4	7.1
4	37.5	37.5	0.0	25.0	20.0	46.7	20.0	13.3	20.0	30.0	10.0	30.0
5	66.7	0.0	33.3	0.0	25.0	50.0	0.0	25.0	14.8	29.6	14.8	40.7
6	25.0	62.5	12.5	0.0	35.3	35.3	17.6	11.8	3.8	26.9	19.2	50.0
Percent selected across all factors	33.7%	32.6%	16.8%	16.8%	36.9%	36.9%	17.2%	9.0%	18.4%	34.0%	17.7%	29.9%
Percent available race/sex group selected**	42.9%	50.0%	66.6%	57.7%	58.6%	74.5%	68.0%	47.6%	21.8%	41.7%	40.7%	54.5%

*Number of factors retained varies across schools and race/sex groups.

**N's adjusted to account for students who loaded on two or more factors.

Table 2

Factor Analysis of Verbal Communication Patterns of White Females
Percent Race/Sex Included Within Factors*

	Middle School--Team A				Middle School--Team B				Junior High			
Factors	Percent WM	Percent WF	Percent BM	Percent BF	Percent WM	Percent WF	Percent BM	Percent BF	Percent WM	Percent WF	Percent BM	Percent BF
1	48.5%	6.1%	30.3%	15.2%	72.0%	8.0%	16.0%	4.0%	13.0%	80.4%	0.0%	4.5%
2	75.0	8.3	8.3	8.3	38.1	52.4	0.0	9.5	39.0	7.3	34.1	12.1
3	50.0	20.0	20.0	10.0	56.3	6.3	31.3	6.3	40.7	7.4	25.9	10.6
4	64.3	28.6	7.1	0.0	43.8	43.8	6.3	6.3	31.6	40.7	7.4	0.0
5	28.6	57.1	0.0	14.3	50.0	25.0	16.7	8.3	42.9	0.0	50.0.	1.5
6	50.0	30.0	0.0	20.0	25.0	12.5	50.0	12.5	12.5	12.5	56.3	4.5
7	69.2	7.7	7.7	15.4	50.0	10.0	30.0	10.0				
8	100.0	0.0	0.0	0.0								
Percent selected across all factors	58.5%	16.0%	14.2%	11.3%	50.9%	24.1%	17.6%	7.4%	28.8%	33.7%	23.9%	13.5%
Percent available race/sex group selected**	71.4%	30.0%	72.4%	34.6%	72.9%	49.0%	68.0%	38.1%	40.9%	47.8%	55.6%	33.3%

*Number of factors retained varies across schools and sex/role groups.

**N's adjusted to account for students who loaded on two or more factors.

Table 3

Factor Analysis of Verbal Communication Patterns of Black Males
Percent Race/Sex Included Within Factors*

	Middle School--Team A				Middle School--Team B				Junior High			
Factors	Percent WM	Percent WF	Percent BM	Percent BF	Percent WM	Percent WF	Percent BM	Percent BF	Percent WM	Percent WF	Percent BM	Percent BF
1	36.8%	50.0%	2.9%	10.3%	5.4%	64.9%	5.4%	24.3%	29.7%	54.7%	3.1%	12.5%
2	59.3	18.5	14.8	7.4	72.5	15.0	10.0	2.5	47.2	37.7	3.8	11.3
3	52.8	19.4	16.7	11.1	62.2	18.9	16.2	2.7	25.0	30.0	15.0	30.0
4	38.1	33.3	4.8	23.8	43.8	34.4	9.4	12.5	26.5	47.1	2.9	23.5
5	22.7	50.0	4.5	22.7								
Percent selected across all factors	42.0%	36.8%	8.0%	13.2%	47.6%	31.5%	10.5%	10.5%	33.0%	43.5%	5.8%	17.8%
Percent available Race/Sex group Selected**	75.7%	100.0%	42.9%	69.2%	82.9%	68.6%	52.0%	57.1%	50.9%	62.6%	18.5%	43.9%

*Number of factors retained varies across schools and race/sex groups.
**N's adjusted to account for students who loaded on two or more functions.

Table 4

Factor Analysis of Verbal Communication Patterns of Black Females
Percent Race/Sex Included Within Factors*

	Middle School--Team A				Middle School--Team B				Junior High			
Factors	Percent WM	Percent WF	Percent BM	Percent BF	Percent WM	Percent WF	Percent BM	Percent BF	Percent WM	Percent WF	Percent BM	Percent BF
1	46.7%	23.3%	26.7%	3.3%	45.9%	34.4%	14.8%	3.3%	49.2%	36.1%	8.2%	6.6%
2	45.5	13.6	40.9	0.0	61.5	26.9	11.5	0.0	44.8	47.8	4.5	3.0
3	57.9	36.8	5.3	0.0	41.2	41.2	11.8	5.9	0.0	0.0	40.5	59.5
4	54.5	31.8	13.6	0.0								
5	54.5	36.4	9.1	0.0								
6	17.4	56.5	8.7	17.4								
Percent selected across all factors	45.7%	32.6%	18.1%	3.6%	49.5%	34.0%	13.6%	2.9%	35.3%	31.8%	14.7%	18.2%
Percent available Race/Sex group selected**	70.0%	74.0%	85.7%	15.4%	64.3%	60.8%	52.0%	14.3%	49.1%	43.5%	42.6%	45.5%

*Number of factors retained varies across schools and race/sex groups.
**N's adjusted to account for students who loaded on two or more factors.

Table 5

Differences Among Students Participation in School Verbal Communication Networks

Type of Classmate Selection	Middle School Team A	Middle School Team B	Junior High
% students not selected by any other students	1.8%	2.4%	15.1%
% each race - sex group not selected by any other students:			
- WMs	--	--	13.6
- WFs	2.0	2.0	15.7
- BMs	--	4.0	14.8
- BFs	7.7	9.5	16.7
% students selected by all race-sex groups	13.8	15.0	1.7
% each race-sex group selected by all race-sex groups:			
- WMs	12.9	20.0	.9
- WFs	16.0	13.7	4.3
- BMs	19.0	16.0	--
- BFs	7.7	--	--
% selected by WMs and WFs, but no blacks	1.2	4.2	6.4
% each race-sex group selected by WMs and WFs, but no blacks:			
- WMs	1.4	2.9	4.5
- WFs	--	--	5.2
- BMs	--	8.0	11.1
- BFs	3.8	14.3	7.6
% selected by BMs and BFs, but no whites	8.4	6.6	7.2
% each race-sex group selected by BMs and BFs, but no whites:			
- WMs	8.6	4.3	14.5
- WFs	14.0	11.8	6.1
- BMs	4.8	4.0	1.8
- BFs	--	4.7	1.5

Table 6

Factor Analysis of Verbal Communication Patterns
Amount of Variance Accounted for by Each Factor
Varimax Rotation

Factors	Middle School--Team A				Middle School--Team B				Junior High			
	WMs	WFs	BMs	BFs	WMs	WFs	BMs	BFs	WMs	WFs	BMs	BFs
1	19.474%	15.189%	30.829%	15.438%	17.835%	13.314%	23.162%	40.735%	17.413%	22.141%	44.412%	29.235%
2	10.586	7.758	17.076	13.462	13.772	12.456	20.970	25.897	13.126	22.024	42.179	28.706
3	7.973	7.378	15.143	12.518	10.050	10.720	19.448	12.536	12.581	15.171	27.130	22.030
4	6.188	7.328	14.596	12.336	9.886	8.202	17.587		12.502	10.972	25.407	
5	5.523	6.513	10.272	11.333	8.357	7.380			12.327	9.298		
6	5.484	6.485		10.984	8.156	7.129			11.055	9.181		
7		6.474				7.125						
8		5.979										

Table 7

Summary of Factor Type Descriptions Across Schools

Percent Representation of Each Type

Factor Type Descriptions	Percent Middle School - Team A	Percent Middle School Team B	Percent Junior High
White-black male groups	20.0%	20.0%	15.8%
White male - female groups	36.0	30.0	36.8
White male groups	24.0	30.0	
White female groups	12.0	20.0	10.5
Fairly even across all race-sex groups	8.0		
Fairly even across WMs, WFs & BMs			5.3
Fairly even across WMs, WFs & BFs			5.3
Black male - female groups			5.3
Black male groups			5.3
Black female groups			5.3
White - black female groups			10.5

Table 8

Descriptions of Student Verbal Communication Factors As Identified by Different Race/Sex Students

Middle School-Team A Factor Descriptions

White Males		White Females		Black Males		Black Females	
Factor Types	n	Factor Types	n	Factor Types	n	Factor Types	n
White - black male groups		White - black male group		White - black male group		White - black male group	
-without any females	1	-with WF's & BF's	1	-with WF's & BF's	1	-with WF's & BF's	1
White male-female group		White male group		White male group		-without BF's	1
-without BF's	1	-with WF's, BM's, BF's	3	-with WF's, BM's, BF's	2	White male - female group	
-without BM's	1	-without other students	1	White female group		-without BF's	3
White female group		White male-female group		-with WM's, BM's, BF's	1	White female group	
-without BF's	1	-without BF's	1	White male - female group		-with WM's, BM's, BF's	1
All groups -- fairly even		-without BM's	2	-with BM's & BF's	1		
-all students	1						
-without WM's	1						

Middle School-Team B Factor Descriptions

White - black male group		White - black male group		White male group		White male group	
-without any females	1	-with WF's & BF's	3	-with WF's, BM's, BF's	2	-without BF's	1
White Male group		White male group		White female group		White male - female group	
-with WF's, BM's, BF's	1	-with WF's, BM's, BF's	2	-with WM's, BM's, BF's	1	-with BM's & BF's	1
White female group		White female group		White male - female group		without BF's	1
-with WM's, BM's, BF's	1	-without BM's	1	-with BM's & BF's	1		
-without BF's	1	White male - female group					
White male - female group		-with BM's & BF's	1				
-with BM's & BF's	2						

Junior High Factor Descriptions

White - black female group		White - black male group		White male - female group		White male - female group	
-with WM's & BM's	2	-with WF's & BF's	2	-with BM's & BF's	3	-with BM's & BF's	2
White female group		-without WF's	1	White male - female and		Black male - female group	
-with WM's, BM's, BF's	1	White male - female group		black female		-with no whites	1
White male - female group		-without BF's	1	-a few BM's	1		
-with BM's & BF's	1	White female group					
Black female group		-without BM's	1				
-with WM's, WF's, BM's	1	Black male group					
White male - female and		-with WM's, WF's, BF's	1				
black male							
-a few BF's	1						